FIG. 1

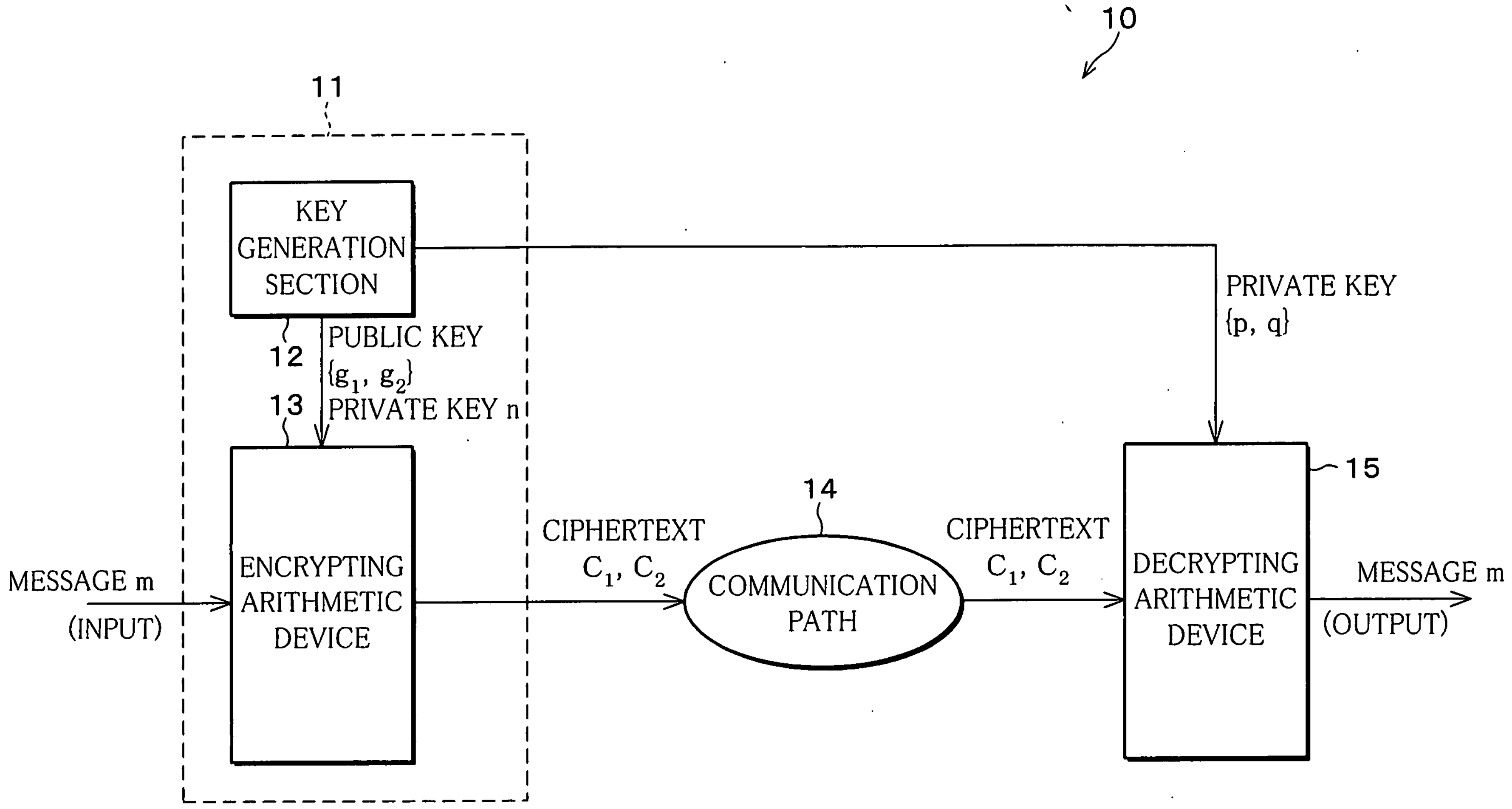

10
11
KEY GENERATION SECTION
12
PUBLIC KEY {g_1, g_2}
PRIVATE KEY n
13
PRIVATE KEY {p, q}
MESSAGE m
(INPUT)
ENCRYPTING ARITHMETIC DEVICE
CIPHERTEXT C_1, C_2
14
COMMUNICATION PATH
CIPHERTEXT C_1, C_2
15
DECRYPTING ARITHMETIC DEVICE
MESSAGE m
(OUTPUT)

FIG. 2

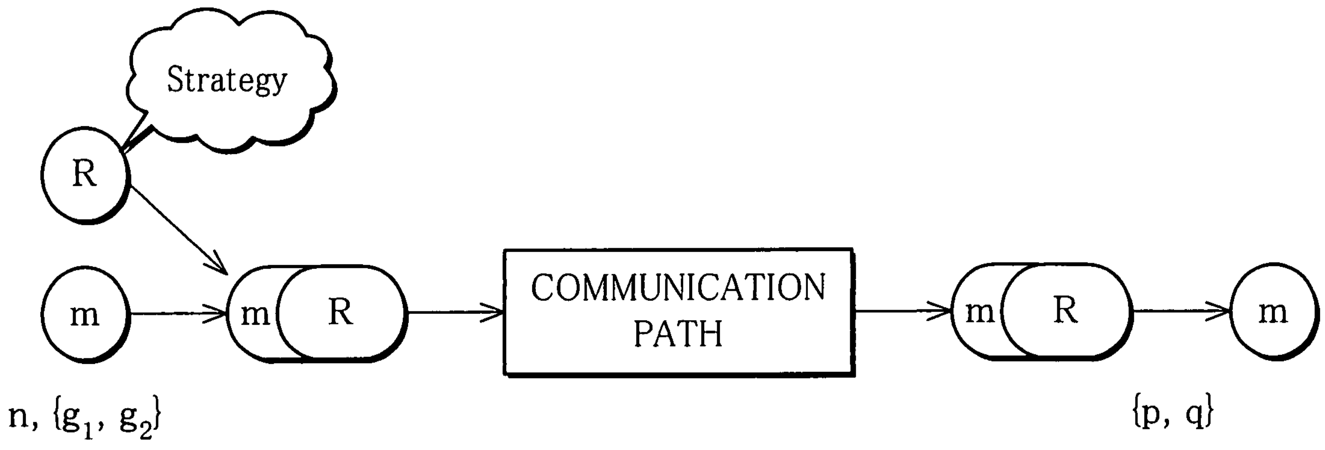
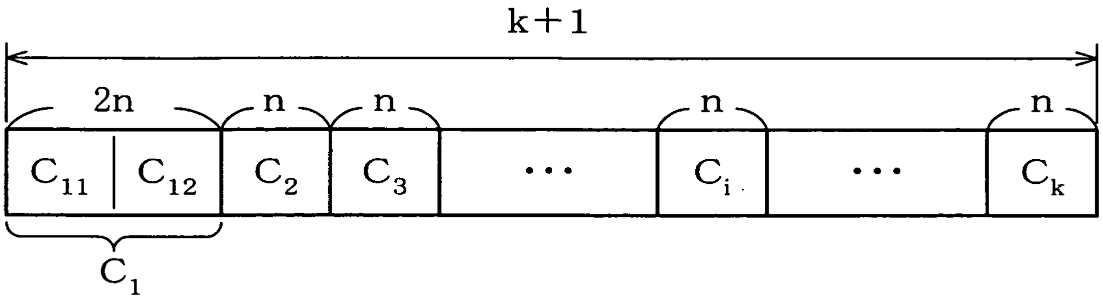


FIG. 3



$$C_1=(C_{11}, C_{12}), \quad C_{11}=m_1R_1 (\mathrm{mod}\ \ n), \quad C_{12}=m_1R_2 (\mathrm{mod}\ \ n)$$

$$C_i=m_i \oplus R_{b_i+1}; \quad b_i=0 \mathrm{or} 1 \in m_1, \quad 2 \leq i \leq k < \lfloor \log_2 n \rfloor$$